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PYTHONASTER PACIFICUS N. SP., A NEW STARFISH OF THE FAMILY MYXASTERIDAE (ECHINODERMATA: ASTEROIDEA)

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Abstract.—A new species of the starfish family Myxasteridae, *Pythonaster pacificus,* is described from 1900 fms off Baja California.

A new species of the exceedingly rare deep-sea genus *Pythonaster,* collected by Scripps Institution of Oceanography in December 1969, was sent to the National Museum of Natural History by Mr. Spencer Luke for identification. Since it was in rather poor condition, it was held in the hopes of receiving additional specimens. Such further material has not been forthcoming, and as only 10 specimens are known for the entire family Myxasteridae (3 genera, 7 species), it was thought that a description should be published in order to place this specimen on record.

An excellent review of the family Myxasteridae is given by Alton (1966). The present new species, from off Baja California, adds little to our knowledge of this family, but is the first Pythonaster from the Pacific.

Pythonaster pacificus, new species
Figs. 1–2, Pl. 1

Material.—The holotype and only known specimen (USNM E17965) was collected by the R/V Melville with a 25 ft otter trawl on the abyssal plain off Baja California (31°19.7′N, 119°39.2′W) at 2010 fms on 18 December 1969. The holotypes of *Pythonaster murrayi* Sladen and *Pythonaster atlantidis* A. H. Clark were also examined.

Description.—Rays 5; R = 113 mm, r = 11 mm, diameter of osculum = 6 mm, diameter of madreporite = 5 mm, circumference of arm base = 42 mm, circumference of arm at midpoint = 16 mm.

The long, contorted rays, swollen at the base and attenuate and compressed laterally beyond the base, come to an acute terminus. In cross section, they are steeply arched, so the arm, higher than wide along its entire length, is triangular in outline from about midway to the tip. The interradial sulci are conspicuous and extend from osculum to mouth plates.

The abactinal surface is made up of tiny, delicate, rounded plates, many bearing, on a more or less raised boss, a fascicle of 4–6 minute webbed spinules. The plates are set in a thick skin, not imbricating, and the single

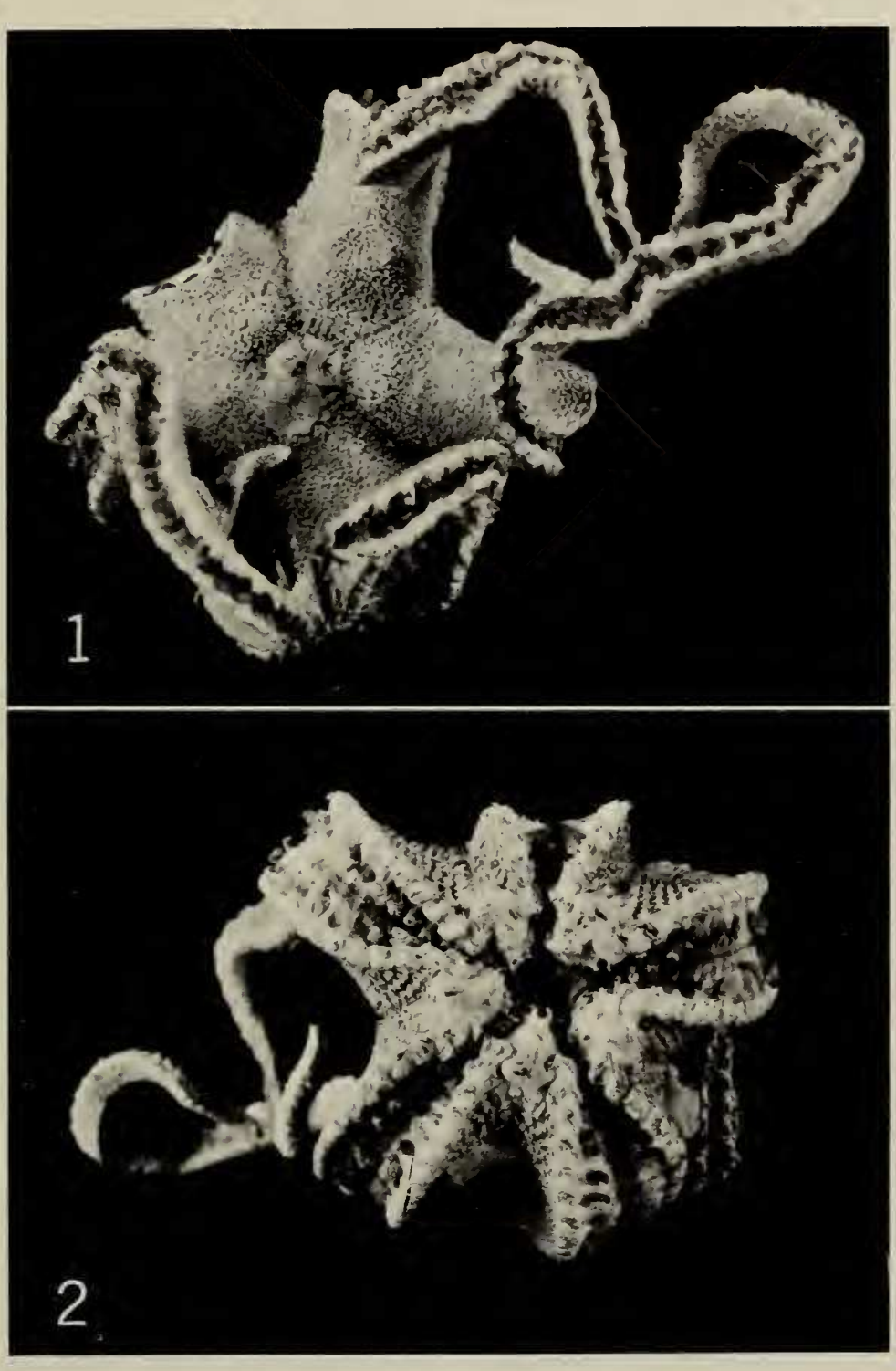

Fig. 1. *Pythonaster pacificus*: **1,** Abactinal view; **2,** Actinal view.

papular pores between them are rather large. The plates are in regular oblique transverse rows across the arms, quite compact on the disc and becoming progressively further apart out on the arms.

The center of the abactinal surface is occupied by the osculum and the madreporite, both of about equal size. The osculum is surrounded by 5 heavy, elongate plates bearing a fan-like valve of 10 long, slender spines webbed together (one valve bears only 5 spines, on a shorter plate); behind the fan-shaped valve is a narrow bare area, and the outer edge of the plate

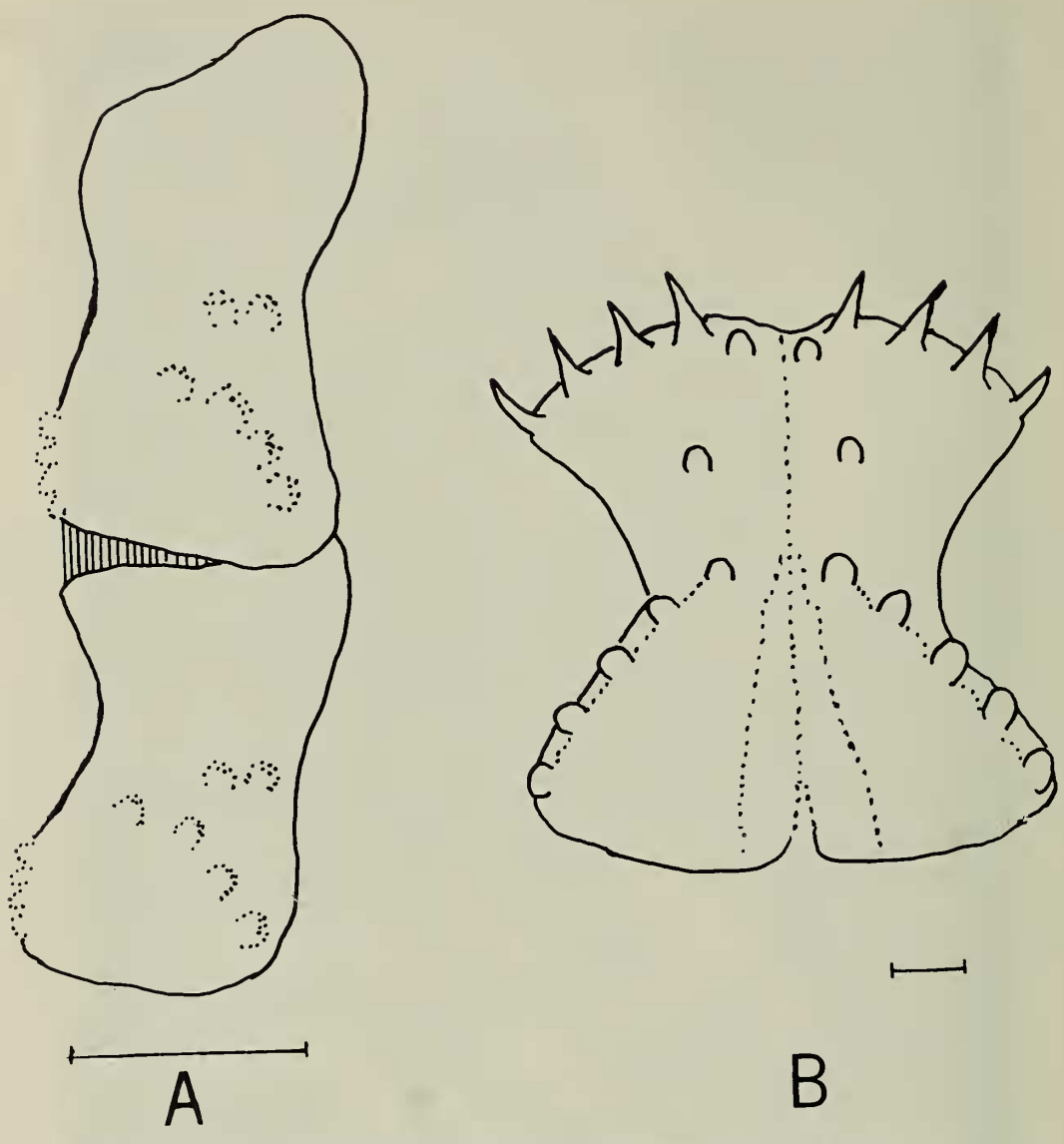

Fig. 2. *Pythonaster pacificus*: **A**, Two adambulacral plates; **B**, Mouth plate. Scale = 1 mm.

bears a row of short, webbed spinelets. Two of the large plates are separated by the intrusion of the very large and heavy madreporite.

The adambulacral plates are somewhat hourglass-shaped; they remind one of the adambulacral plates in the Brisingidae. Most of them are badly abraded and the spines are missing, but apparently they bore 2 crescentic series of 4 webbed spines, the inner, or furrow, series longer, plus 2 larger spines proximal to the furrow spines, which may have been webbed to them.

The very large, broad mouth plates are also badly eroded, but apparently bore about 5 short stout spines along the oral border, 1 or 2 stout suboral spines, and a crescentic group of 4–6 spines on a ridge about one-third of the way in from the distal edge. The prominent median keel is rather broad.

The tubefeet are large, biserial, suckered, and fortified with a ring of calcareous plates.

The ambulacral plates are long and unusually straight, with a large rounded crest, forming, with its opposite number, a very solid aboral ridge.

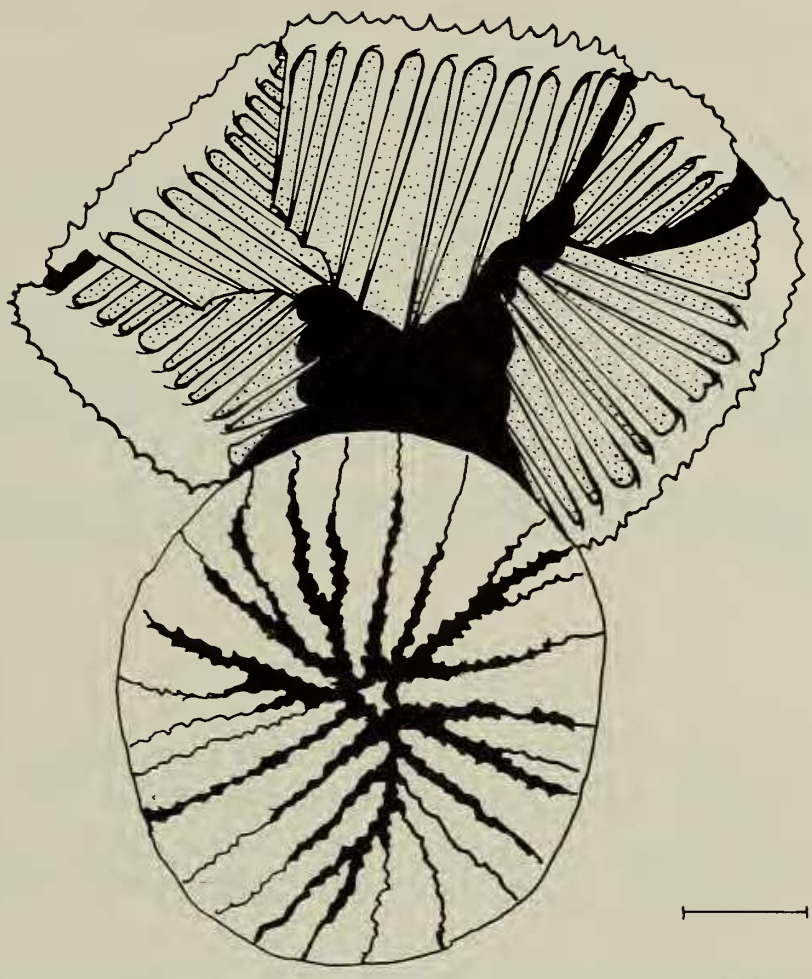

Fig. 3. Osculum and madreporite of *Pythonaster pacificus*. Scale = 1 mm.

Discussion.—Only 2 other species of *Pythonaster* are known, each from a single specimen: *Pythonaster murrayi* Sladen, from the South Atlantic off Buenos Aires (1900 fms), and *P. atlantidis* A. H. Clark, from the mid-Atlantic west of Gibralter (3200 meters). *P. pacificus* lacks the carinal rows(s) of spines present on the other 2 species; the adambulacral furrow spines number only 4 (vs. 5–6 in *P. murrayi,* 8–10 in *P. atlantidis*); the oscular valves contain 10 long, slender but sturdy, webbed spines, rather than "numerous fine, webbed spines" as in the other 2 species; the madreporite is larger and more conspicuous in *P. pacificus,* as are the mouth plates.

The differences among these 3 species may appear slight, in light of the paucity of material, but their wide geographical separation suggests that even the smallest differences should not be ignored. Until this family is better known, no speculations on variation within a species can be made.

Acknowledgments

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